## 53. Biofilms formation by *Candida tropicalis* and *Candida parapsilosis* on an *in vitro* oral epithelium

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Objectives: The primary event in *Candida* infection is the colonization of host mucosal surfaces, often leading to the formation of biofilms. Most cases of candidosis have been attributed to *Candida albicans*, however, recently, non-*Candida albicans Candida* species have been identified as frequent pathogens of humans. Given the clinical importance of biofilm growth, the aim of this work was to study the biofilm formation by *Candida tropicalis* and *Candida parapsilosis* on an *in vitro* oral epithelium.
Methods: *Candida tropicalis* (n=7) and *Candida parapsilosis* (n=7) strains originating from oral and vaginal mucosa and from the urinary tract were used. The biofilms were formed on commercially available reconstituted human oral epithelium (RHOE) during 12h and 24h. . Confocal laser scanner microscopy (CLSM) was used to investigate the biofilm formation ability and its effect on epithelium. Simultaneously, the levels of lactate dehydrogenase (LDH) released by the epithelial cell were also determined to assess the extension of tissue damage.
Results: CLSM images showed that all strains from different body sites formed biofilms on the RHOE however this was in a strain dependent manner. Low invasion of RHOE occurred with *C. parapsilosis* biofilms cells after 12h, whereas extensive tissue damage was evident after 24h when assessed by histological examination and LDH determination. Conversely, *C. tropicalis* biofilms cells exhibited higher tissue invasion after 12h of infection, with extensive tissue damage occurring after 24h of biofilm formation.
Conclusions: The CLSM approach together with LDH measurement conclusively showed that *C. parapsilosis* and *C. tropicalis* were able to form biofilms and also invade RHOE, leading to significant damage in the tissue structure. Overall, the present work highlights the importance of the biofilms in the pathogenicity of *C. tropicalis* and *C. parapsilosis* species.